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Terms	Documents
theanine	121

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**Refine Search:**

17 and 12

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<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT,PGPB,JPAB,EPAB,DWPI	theanine	121	<u>L7</u>
PGPB,JPAB,EPAB,DWPI	14 and stress\$	30	<u>L6</u>
PGPB,JPAB,EPAB,DWPI	14 and antistress\$	0	<u>L5</u>
PGPB,JPAB,EPAB,DWPI	11 and 12	91	<u>L4</u>
USPT,PGPB,JPAB,EPAB,DWPI	11 and 12	371	<u>L3</u>
USPT,PGPB,JPAB,EPAB,DWPI	antidepress\$ or antistress\$	10724	<u>L2</u>
USPT,PGPB,JPAB,EPAB,DWPI	PMS or premenstrual syndrome	29590	<u>L1</u>

(FILE 'HOME' ENTERED AT 17:30:05 ON 15 MAR 2001)

FILE 'MEDLINE, CAPLUS, BIOSIS' ENTERED AT 17:30:23 ON 15 MAR 2001

L1	396 S	THEANINE
L2	71477 S	ANTIDEPRESS?
		E ANTIDEPRESS?/CT
L3	808 S	ANTISTRESS?
		E ANTISTRESS?/CT
L4	0 S	L1 AND L2
L5	2 S	L1 AND L3
L6	3595 S	PREMENSTRUAL SYNDROME
		E PREMENSTRUAL SYNDROME/CT
L7	0 S	L6 AND L3
L8	244 S	L6 AND STRESS?
L9	49 S	L8 AND STRESS?/TI
L10	42	DUPLICATE REMOVE L9 (7 DUPLICATES REMOVED)
L11	34126 S	TEA
L12	0 S	L11 AND ZINIC
L13	728 S	L11 AND ZINC
L14	259 S	L13 AND TEA/TI
L15	3 S	L14 AND THEANINE

=> file caplus medline caold  
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
14.21	29.42

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 11:40:14 ON 29 JUN 2002  
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=> s l1

L5 336 L1

=> s premenstr?

L6 4142 PREMENSTR?

=> s l5 and l6

L7 0 L5 AND L6

=> s l5 and (sodium or potassium or calcium or zinc or iron or copper)  
L8 42 L5 AND (SODIUM OR POTASSIUM OR CALCIUM OR ZINC OR IRON OR  
COPPER

)

=> duplicate remove l8

DUPLICATE IS NOT AVAILABLE IN 'CAOLD'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE

DUPLICATE PREFERENCE IS 'CAPLUS, MEDLINE'

KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L8

L9 40 DUPLICATE REMOVE L8 (2 DUPLICATES REMOVED)

=> s l9 and py<=1998

L10 29 L9 AND PY<=1998

=> d ibib abs 1-29

Trying 3106016892...Open

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NEWS 4 Oct 27 SET ABBREVIATIONS and SET PLURALS extended in  
Derwent World Patents Index files  
NEWS 5 Oct 27 Patent Assignee Code Dictionary now available  
in Derwent Patent Files  
NEWS 6 Oct 27 Plasdoc Key Serials Dictionary and Echoing added to  
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NEWS 7 Nov 29 Derwent announces further increase in updates for DWPI  
  
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FILE 'HOME' ENTERED AT 12:21:38 ON 30 NOV 2000

=> file registry

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.15	0.15

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STRUCTURE FILE UPDATES: 28 NOV 2000 HIGHEST RN 304849-62-5  
DICTIONARY FILE UPDATES: 28 NOV 2000 HIGHEST RN 304849-62-5

TSCA INFORMATION NOW CURRENT THROUGH July 8, 2000

Please note that search-term pricing does apply when

conducting SmartSELECT searches.

Structure search limits have been increased. See HELP SLIMIT for details.

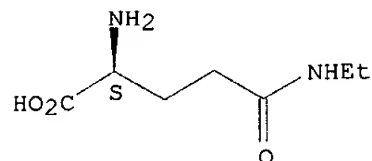
=> s theanine

L1 6 THEANINE

=> d 1-6

L1 ANSWER 1 OF 6 REGISTRY COPYRIGHT 2000 ACS  
RN 175696-81-8 REGISTRY  
CN L-Glutamine, N-ethyl-, monohydrochloride (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN **L-Theanine monohydrochloride**  
CN N-Ethyl-L-glutamine hydrochloride  
CN N-Ethyl-L-glutamine monohydrochloride  
CN **Theanine hydrochloride**  
FS STEREOSEARCH  
MF C7 H14 N2 O3 . Cl H  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT  
CRN (3081-61-6)

Absolute stereochemistry.



● HCl

2 REFERENCES IN FILE CA (1967 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 2 OF 6 REGISTRY COPYRIGHT 2000 ACS  
RN 99533-51-4 REGISTRY  
CN **Hydrolase, theanine (9CI)** (CA INDEX NAME)  
OTHER NAMES:  
CN **Theanine hydrolase**  
MF Unspecified  
CI MAN  
SR CA  
LC STN Files: BIOBUSINESS, BIOSIS, CA, CAPLUS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

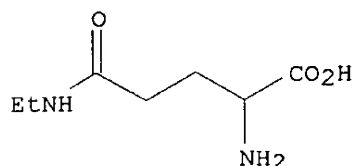
2 REFERENCES IN FILE CA (1967 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 3 OF 6 REGISTRY COPYRIGHT 2000 ACS  
RN 62213-31-4 REGISTRY  
CN Synthetase, N5-ethylglutamine (9CI) (CA INDEX NAME)  
OTHER NAMES:

CN E.C. 6.3.1.6  
CN **Theanine synthetase**  
MF Unspecified  
CI MAN  
LC STN Files: BIOSIS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

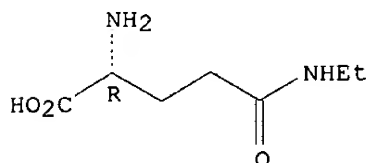
L1 ANSWER 4 OF 6 REGISTRY COPYRIGHT 2000 ACS  
RN 34271-54-0 REGISTRY  
CN Glutamine, N-ethyl- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN DL-Glutamine, N-ethyl-  
CN Glutamine, N-ethyl-, DL- (8CI)  
OTHER NAMES:  
CN **DL-Theanine**  
DR 17010-37-6  
MF C7 H14 N2 O3  
CI COM  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, TOXLIT  
(\*File contains numerically searchable property data)



4 REFERENCES IN FILE CA (1967 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 5 OF 6 REGISTRY COPYRIGHT 2000 ACS  
RN 5822-62-8 REGISTRY  
CN D-Glutamine, N-ethyl- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Glutamine, N-ethyl-, D- (8CI)  
OTHER NAMES:  
CN **D-Theanine**  
FS STEREOSEARCH  
MF C7 H14 N2 O3  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, TOXLIT  
(\*File contains numerically searchable property data)

Absolute stereochemistry.

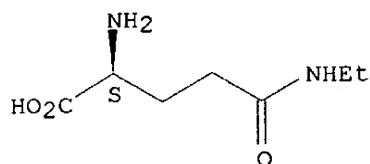


2 REFERENCES IN FILE CA (1967 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 6 OF 6 REGISTRY COPYRIGHT 2000 ACS

RN 3081-61-6 REGISTRY  
 CN L-Glutamine, N-ethyl- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Glutamine, N-ethyl-, L- (6CI, 7CI, 8CI)  
 OTHER NAMES:  
 CN **L-Theanine**  
 CN Theanin  
 CN **Theanine**  
 AR 17010-37-6  
 FS STEREOSEARCH  
 MF C7 H14 N2 O3  
 CI COM  
 LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA,  
 CABA,  
 CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM,  
 MEDLINE,  
 NAPRALERT, PROMT, TOXLINE, TOXLIT, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: EINECS\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



246 REFERENCES IN FILE CA (1967 TO DATE)  
 2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 247 REFERENCES IN FILE CAPLUS (1967 TO DATE)  
 24 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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FULL ESTIMATED COST	13.02	13.17

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=> file medline caplus biosis

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=> s homeostasis

L1 906999 HOMEOSTASIS

=> s theanine

L2 385 THEANINE

=> s l1 and l2

L3 6 L1 AND L2

=> duplicate remove l3

PROCESSING COMPLETED FOR L3

L4 6 DUPLICATE REMOVE L3 (0 DUPLICATES REMOVED)



=> d ibib abs 1-6

L4 ANSWER 1 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1999:378548 BIOSIS  
DOCUMENT NUMBER: PREV199900378548  
TITLE: Human gammadelta T cells recognize alkylamines derived from microbes, edible plants, and tea: Implications for innate immunity.  
AUTHOR(S): Bukowski, Jack F. (1); Morita, Craig T.; Brenner, Michael B.  
CORPORATE SOURCE: (1) Lymphocyte Biology Section, Division of Rheumatology, Immunology, and Allergy, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, 02115 USA  
SOURCE: Immunity, (July, 1999) Vol. 11, No. 1, pp. 57-65. ISSN: 1074-7613.  
DOCUMENT TYPE: Article  
LANGUAGE: English  
SUMMARY LANGUAGE: English  
AB Approximately 4% of peripheral blood T cells in humans express a T cell receptor with markedly restricted germline gene segment usage (Vgamma2Vdelta2). Remarkably, these T cells expand 2- to 10-fold (8%-60% of all circulating T cells) during many microbial infections. We show here that these T cells recognize a family of naturally occurring primary alkylamines in a TCR-dependent manner. These antigenic alkylamines are secreted to millimolar concentrations in bacterial supernatants and are found in certain edible plants. Given the large numbers of memory Vgamma2Vdelta2 T cells in adult humans, recognition of alkylamine antigens offers the immune system a response of the magnitude of major superantigens for alphabeta T cells and may bridge the gap between innate and adaptive immunity.

L4 ANSWER 2 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1997:528662 BIOSIS  
DOCUMENT NUMBER: PREV199799827865  
TITLE: The influence of **theanine** administration on stimulatory action of caffeine by EEG in the rats.  
AUTHOR(S): Kakuda, T. (1); Sakane, I. (1); Takihara, T. (1); Okamura, N.; Okai, O.  
CORPORATE SOURCE: (1) Central Res. Inst., Itoen Ltd., Shizuoka Japan  
SOURCE: Society for Neuroscience Abstracts, (1997) Vol. 23, No. 1-2, pp. 1351. Meeting Info.: 27th Annual Meeting of the Society for Neuroscience New Orleans, Louisiana, USA October 25-30, 1997  
ISSN: 0190-5295.  
DOCUMENT TYPE: Conference; Abstract; Conference  
LANGUAGE: English

L4 ANSWER 3 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1997:179419 BIOSIS  
DOCUMENT NUMBER: PREV199799471132  
TITLE: Inhibitory effect of green tea on injury to a cultured renal epithelial cell line, LLC-PK-1.  
AUTHOR(S): Yokozawa, Takako (1); Dong, Erbo (1); Chung, Hae Young; Oura, Hikokichi; Nakagawa, Hitomi

CORPORATE SOURCE: (1) Res. Inst. Wakan-Yaku, Toyama Med. Pharmaceutical University, Sugitani, Toyama 930-01 Japan  
SOURCE: Bioscience Biotechnology and Biochemistry, (1997) Vol. 61, No. 1, pp. 204-206.  
ISSN: 0916-8451.

DOCUMENT TYPE: Article

LANGUAGE: English

AB When cells from a cultured renal epithelial cell line, LLC-PK-1, were cultured under hypoxic conditions (oxygen concentration of 2% or less) before reoxygenation was applied (95% air, 5% CO-2), the leakage of lactate dehydrogenase (LDH) into the medium increased. This phenomenon was

inhibited in the presence of dimethyl sulfoxide, a hydroxyl radical scavenger, suggesting the involvement of free radicals. Such oxidative stress was significantly inhibited by a green tea extract, and more potently by a tannin mixture. On the other hand, under ordinary culture conditions (95% air, 5% CO-2), there was cell injury, although the LDH leakage was less than that under hypoxia/reoxygenation, and such injury was inhibited by the green tea extract and the tannin mixture.

L4 ANSWER 4 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1995:467122 BIOSIS

DOCUMENT NUMBER: PREV199598481422

TITLE: **Theanine**, a glutamate analog, stimulates NMDA-receptors but suppresses excitatory effect of caffeine

in cortical neurons.

AUTHOR(S): Nozawa, A. (1); Umezawa, K. (1); Kobayashi, K. (1); Muramoto, K. (1); Kawahara, M. (1); Mizutani, A. (1); Kakuda, T.; Kuroda, Y. (1)

CORPORATE SOURCE: (1) Dep. Mol. Cell. Neurobiol., Tokyo Metropolitan Inst. Neurosci., Tokyo 183 Japan

SOURCE: Society for Neuroscience Abstracts, (1995) Vol. 21, No. 1-3, pp. 835.

Meeting Info.: 25th Annual Meeting of the Society for Neuroscience San Diego, California, USA November 11-16, 1995

ISSN: 0190-5295.

DOCUMENT TYPE: Conference

LANGUAGE: English

L4 ANSWER 5 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS

ACCESSION NUMBER: 1995:341354 BIOSIS

DOCUMENT NUMBER: PREV199598355654

TITLE: Reduction Effect of **Theanine** on Blood Pressure and Brain 5-Hydroxyindoles in Spontaneously Hypertensive Rats.

AUTHOR(S): Yokogoshi, Hidehiko (1); Kato, Yukiko; Sagesaka, Yuko M.; Takiyama-Matsuura, Takanobu; Kakuda, Takami; Takeuchi, Naokazu

CORPORATE SOURCE: (1) School Food Nutr. Sci., Univ. Shizuoka, 52-1 Yada, Shizuoka 422 Japan

SOURCE: Bioscience Biotechnology and Biochemistry, (1995) Vol. 59, No. 4, pp. 615-618.

ISSN: 0916-8451.

DOCUMENT TYPE: Article

LANGUAGE: English

AB The effect of **theanine**, one of the components of green tea, on the blood pressure and brain 5-hydroxyindoles in spontaneously hypertensive rats (SHR) and Wistar Kyoto rats (WKY) was investigated by intraperitoneally administering **theanine**. The effect of

glutamine, which is structurally similar to **theanine**, was also examined. When SHR were injected with various amounts of **theanine** (0, 500, 1000, 1500, and 2000mg/kg), the change was dose-dependent, and a significant decrease in blood pressure was observed with the high doses (1500 and 2000 mg/kg). A dose of 2000 mg/kg of **theanine** did not alter the blood pressure of WKY, while the same dose to SHR decreased it significantly. On the other hand, glutamine administration to SHR did not change either the blood pressure or the heart rate. The brain 5-hydroxyindole level was significantly decreased by **theanine** administration to both WKY and SHR, the decrease being dose-dependent.

L4 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2000 BIOSIS  
 ACCESSION NUMBER: 1994:318619 BIOSIS  
 DOCUMENT NUMBER: PREV199497331619  
 TITLE: Electrophysiologically potent non-competitive glutamate antagonists at crayfish neuromuscular junctions are also potent inhibitors of (3H)MK801 binding to synaptic membranes from rat central nervous system.  
 AUTHOR(S): Maruyama, M. (1); Takeda, K.  
 CORPORATE SOURCE: (1) Lab. Neuropharmacol., Mitsubishi Kasei Inst. Life Sci.,  
 SOURCE: 11 Minamiooya, Machida-shi, Tokyo 194 Japan  
 Comparative Biochemistry and Physiology C Pharmacology Toxicology and Endocrinology, (1994) Vol. 107, No. 1, pp. 105-110.  
 ISSN: 0742-8413.  
 DOCUMENT TYPE: Article  
 LANGUAGE: English  
 AB This paper describes effects of non-competitive glutamate antagonists, also known as "glutamate open channel blockers", at crayfish neuromuscular junctions, on the binding of (3H)glutamate, (3H)CPP, (3H)AMPA, (3H)kainate and (3H)MK-801 to Triton-treated rat hippocampal synaptic membranes, and (3H)MK-801 to Triton-treated synaptic membranes from young rat spinal cord. The compounds tested were oxymatrine, **theanine**, diltiazem, chlorisondamine, tuberostemonine, trimethaphan,  
 N-2-dansyl-L-arginine-4-t-butylpiperidine amide (TI 233), (1RS,2SR)-5-methyl-1-phenyl-2-(3-piperidinopropyl amino) hexane-1-ol (MLV-5860) and (4S,5R)-4-(2-methylpropyl)-3-(3-(perhydroazepin-1-yl)propyl)-5-phenyl-1,3-oxazoline-2-one (MLV-6976). Among compounds tested, MLV-5860, MLV-6976 and TI 233 potentially inhibited the binding of (3H)MK-801 to Triton-treated rat hippocampal synaptic membranes, but not that of other 3H-labelled ligands.  
 The inhibitory potency of MLV-6976 and MLV-5860 on the binding of (3H)MK-801 was similar to that of MK-801. MLV-6976 could also inhibit the binding of (3H)MK-801 to Triton-treated synaptic membranes from young rat spinal cords, and the inhibitory potency was similar to MK-801. These results suggest that potent glutamate antagonists, acting as open channel blockers at crayfish neuromuscular junction, may have similar pharmacological properties to MK-801 at the mammalian central nervous system, but the reverse may not always be true.

=> s premenstrual or obesity or anxiogenic or menopausal or autonomic

L5 297516 PREMENSTRUAL OR OBESITY OR ANXIOGENIC OR MENOPAUSAL OR AUTONOMIC

=> d hist

(FILE 'HOME' ENTERED AT 14:20:19 ON 30 NOV 2000)

FILE 'MEDLINE, CAPLUS, BIOSIS' ENTERED AT 14:20:43 ON 30 NOV 2000

L1 906999 S HOMEOSTASIS  
L2 385 S THEANINE  
L3 6 S L1 AND L2  
L4 6 DUPLICATE REMOVE L3 (0 DUPLICATES REMOVED)  
L5 297516 S PREMENSTRUAL OR OBESITY OR ANXIOTIC OR MENOPAUSAL OR  
AUTONO

=> s l5 and l1

L6 16810 L5 AND L1

=> s l5 and l2

L7 2 L5 AND L2

=> d ibib abs 1-2

L7 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2000 ACS  
ACCESSION NUMBER: 1999:549146 CAPLUS  
DOCUMENT NUMBER: 131:149342  
TITLE: Composition comprising **theanine**  
INVENTOR(S): Ueda, Tomoko; Nagato, Yukiko; Tanaka, Yukiko; Okubo,  
Tsutomu; Kobayashi, Kanari; Aoi, Nobuyuki; Shu,  
Seiji;  
Juneja, Lekh Raj  
PATENT ASSIGNEE(S): Taiyo Kagaku Co., Ltd., Japan  
SOURCE: PCT Int. Appl., 36 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9942096	A1	19990826	WO 1999-JP784	19990223
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
JP 2000053568	A2	20000222	JP 1998-234968	19980806
JP 2000143508	A2	20000523	JP 1998-330207	19981105
AU 9925488	A1	19990906	AU 1999-25488	19990223
JP 2000247878	A2	20000912	JP 1999-235538	19990823
PRIORITY APPLN. INFO.:			JP 1998-57470	19980223
			JP 1998-142119	19980508
			JP 1998-234968	19980806
			JP 1998-330207	19981105
			WO 1999-JP784	19990223
AB	The invention relates to a compn. comprising <b>theanine</b> which is used for depression and amelioration of the symptom caused by degrdn. of			

homeostatic function, and a mineral compn. comprising **theanine** and a mineral. A compn. which can be used for depressing and ameliorating the above-mentioned symptom and a mineral compn. which is reduced in a taste peculiar to a metal and can be administrated with ease.

REFERENCE COUNT: 2  
REFERENCE(S): (1) Suntory Ltd; JP 06100442 A 1994  
(2) Suntory Ltd; JP 640901 A 1994

L7 ANSWER 2 OF 2 BIOSIS COPYRIGHT 2000 BIOSIS  
ACCESSION NUMBER: 1999:68914 BIOSIS  
DOCUMENT NUMBER: PREV199900068914  
TITLE: **Theanine**, a major flavorful amino acid in green tea leaves, inhibits glutamate-induced neurotoxicity on cultured rat cerebral cortical neurons.  
AUTHOR(S): Nozawa, A. (1); Umezawa, K.; Kobayashi, K.; Kawahara, M.; Muramoto, K.; Kakuda, T. (1); Kuroda, Y.  
CORPORATE SOURCE: (1) Dep. Molecular and Cellular Neurobiol., Tokyo Metropolitan Inst. Neurosci., Tokyo 183-8526 Japan  
SOURCE: Society for Neuroscience Abstracts, (1998) Vol. 24, No. 1-2, pp. 978.  
Meeting Info.: 28th Annual Meeting of the Society for Neuroscience, Part 1 Los Angeles, California, USA November 7-12, 1998 Society for Neuroscience  
. ISSN: 0190-5295.  
DOCUMENT TYPE: Conference  
LANGUAGE: English

=> log y

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L1 7 17010-37-6 OR 34271-54-0 OR 5822-62-8 OR 175696-81-8

=> s theanine

L2 291 THEANINE

=> s 12 or 11

L3 292 L2 OR L1

=> s 13 and review

L4 17 L3 AND REVIEW

=> duplicate remove 14

PROCESSING COMPLETED FOR L4

L5 17 DUPLICATE REMOVE L4 (0 DUPLICATES REMOVED)

=> d ibib abs 1-10

L5 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 2000:306134 CAPLUS

DOCUMENT NUMBER: 132:333493

TITLE: A unique amino acid of green tea, **L-theanine**, and its relaxation effect in humans

AUTHOR(S): Chu, Djong Chi; Okubo, Tsutomu; Ueda, Tomoko; Juneja, Lekh Raj

CORPORATE SOURCE: Nutr. Foods Div., Taiyo Kagaku Co., Ltd., Yokkaichi, 510-0844, Japan

SOURCE: Fragrance J. (2000), 28(4), 74-80

CODEN: FUJAD7; ISSN: 0288-9803

PUBLISHER: Fureguransu Janaru Sha

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A **review** with 22 refs. about **L-theanine**, unique amino acid found almost solely in tea plants. Physiol. function and relaxation effects of **L-theanine** and its application to food are discussed.

L5 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1999:806421 CAPLUS

DOCUMENT NUMBER: 132:165251

TITLE: **L-theanine** - a unique amino acid of green tea and its relaxation effect in humans

AUTHOR(S): Juneja, L. R.; Chu, D.-C.; Okubo, T.; Nagato, Y.; Yokogoshi, H.

CORPORATE SOURCE: Nutritional Foods Division, Taiyo Kagaku Co., Ltd., Yokkaichi, Mie, Japan

SOURCE: Trends Food Sci. Technol. (1999), 10(6-7), 199-204

CODEN: TFTEEH; ISSN: 0924-2244

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A **review** with 21 refs. Since ancient times, it has been said that drinking green tea brings relaxation. The substance that is responsible for a sense of relaxation is **theanine**. **Theanine** is a unique amino acid found almost solely in tea plants and the main component responsible for the exotic taste of green tea. It was found that **L-theanine** administered i.p. to rats reached the brain within 30 min without any metabolic change. **Theanine** also acts as a neurotransmitter in the brain and decreases blood pressure significantly in hypertensive rats. In general, animals always generate very weak elec. pulses on the surface of the brain, called brain waves. Brain waves are classified into four types, namely .alpha., .beta., .delta. and .theta.-waves, based on mental conditions. Generation of .alpha.-waves is considered to be an index of relaxation. In human volunteers, .alpha.-waves were generated on the occipital and parietal regions of the brain surface within 40 min after the oral administration of **theanine** (50-200 mg), signifying relaxation without causing drowsiness. With the successful industrial prodn. of **L-theanine**, we are now able to supply Suntheanine (trade name of **L-theanine**) which offers a tremendous opportunity for designing foods and medical foods targeting relaxation and the redn. of stress. Taiyo Kagaku Co., Ltd, Japan won the 1998 'Food Ingredient Research Award' for development of Suntheanine at Food Ingredients in Europe (Frankfurt). The judges

felt

it was a particularly well-documented and fascinating piece of research.

REFERENCE COUNT: 21

REFERENCE(S): (2) Kawagishi, H; Biosci Biotechnol Biochem 1992, V56,

P689 CAPLUS

(4) Kimura, R; Chem Pharm Bull 1986, V34, P3053  
 CAPLUS  
 (5) Kitaoka, S; Biosci Biotechnol Biochem 1996, V60, P1768 CAPLUS  
 (6) Konishi, S; J Soil Manure 1969, V40, P479 CAPLUS  
 (9) Mukai, T; Tea Res J 1992, V76, P45 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2000 ACS  
 ACCESSION NUMBER: 1999:148538 CAPLUS  
 DOCUMENT NUMBER: 131:4537  
 TITLE: Functions and food applications of L-**theanine**  
 AUTHOR(S): Nagato, Yukiko  
 CORPORATE SOURCE: NF Division, Taiyo Kagaku Co., Ltd., Japan  
 SOURCE: Shokuhin to Kagaku (1999), 41(2), 86-89  
 CODEN: SHTKAY; ISSN: 0037-4105  
 PUBLISHER: Shokuhin to Kagakusha  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Japanese

AB A **review** with 10 refs. on L-**theanine** which is found in green tea, covering the physiol. functions of L-**theanine**, e.g. dopamine secretion promotion, antihypertensive action, and relaxation effect, and the application of L-**theanine** in foods.

L5 ANSWER 4 OF 17 CAPLUS COPYRIGHT 2000 ACS  
 ACCESSION NUMBER: 1999:372401 CAPLUS  
 DOCUMENT NUMBER: 131:169668  
 TITLE: Metabolism of **theanine** in brain and the effects on increase of memory and learning activity  
 AUTHOR(S): Yokogoshi, Hidchiko  
 CORPORATE SOURCE: Japan  
 SOURCE: Food Style 21 (1999), 3(6), 41-44  
 CODEN: FSTYFF  
 PUBLISHER: Shokuhin Kagaku Shinbunsha  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Japanese

AB A **review** with 9 refs. on the effects of **theanine** (.gamma.-glutamylethylamide) in green tea on brain neurotransmitter, dopamine release, blood pressure, relaxation, and memory and learning activities.

L5 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2000 ACS  
 ACCESSION NUMBER: 1999:26097 CAPLUS  
 DOCUMENT NUMBER: 130:100328  
 TITLE: Application and development of skin moisturizers  
 AUTHOR(S): Sasaki, Ichiro; Uehara, Shizuka  
 CORPORATE SOURCE: Basic Res. Lab., Kose Corp., Tokyo, 174-0051, Japan  
 SOURCE: Fragrance J. (1998), 26(12), 39-44  
 CODEN: FUJAD7; ISSN: 0288-9803  
 PUBLISHER: Fureguransu Janaru Sha  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Japanese

AB A **review** with 22 refs., on optical isomerism-dependent multifunctional and physiol. properties of amino acids, and properties of L-amino acids, such as L-serine, L-PCA (pyrrolidonecarboxylic acid), and L-**theanine**, as ideal skin moisturizer.

L5 ANSWER 6 OF 17 CAPLUS COPYRIGHT 2000 ACS  
 ACCESSION NUMBER: 1997:517803 CAPLUS  
 DOCUMENT NUMBER: 127:189957  
 TITLE: Brain activity and tea. Involvement of



**theanine** in metabolism of neurotransmitters in brain

AUTHOR(S): Yokogoshi, Hidehiko  
CORPORATE SOURCE: Shokuhin Eiyo Kagakubu, Shizuoka-kenritsu Daigaku, Shizuoka, 422, Japan  
SOURCE: Kagaku to Seibutsu (1997), 35(8), 541-542  
CODEN: KASEAA; ISSN: 0453-073X  
PUBLISHER: Gakkai Shuppan Senta  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A **review** with 5 refs., on physiol. function of **theanine** in the brain, focusing on acceleration effect of **theanine** on dopamine release and its possible mechanism.

L5 ANSWER 7 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1997:622503 CAPLUS  
DOCUMENT NUMBER: 127:275341  
TITLE: **Theanine** - its synthesis, isolation, and physiological activity  
AUTHOR(S): Chu, D. - C.; Kobayashi, K.; Juneja, L. R.; Yamamoto, T.  
CORPORATE SOURCE: International Division, Taiyo Kagaku Co., Ltd., Japan  
SOURCE: Chem. Appl. Green Tea (1997), 129-135. Editor(s): Yamamoto, Takehiko. CRC: Boca Raton, Fla.  
CODEN: 65BJA7  
DOCUMENT TYPE: Conference; General Review  
LANGUAGE: English  
AB A **review** with 22 refs. on the presence of **theanine** in the tea plant, its enzymic synthesis and some of its physiol. activities.

L5 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1995:560039 CAPLUS  
DOCUMENT NUMBER: 122:313459  
TITLE: Nutrition, neurotransmitter and brain function  
AUTHOR(S): Yokogoshi, Hidehiko  
CORPORATE SOURCE: Sch. Food Nutr. Sci., Univ. Shizuoka, Shizuoka, 422, Japan  
SOURCE: Nippon Nogei Kagaku Kaishi (1995), 69(5), 571-3  
CODEN: NNKKA; ISSN: 0002-1407  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A **review** with 11 refs. on the effects of nutrients, e.g., carbohydrates, proteins, amino acids, caffeine, **theanine**, fats, and fatty acids on neurotransmitters in brain.

L5 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1996:62842 CAPLUS  
DOCUMENT NUMBER: 124:155765  
TITLE: **Theanine** and its physiological functions  
AUTHOR(S): Suzuki, Masayuki; Nanjo, Fumio; Hara, Yukihiro  
CORPORATE SOURCE: Mitsui Norin K.K., Japan  
SOURCE: Shokuhin Kogyo (1995), 38(24), 77-81  
CODEN: SKGYAW; ISSN: 0559-8990  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A **review** and discussion with 24 refs. on extn. of **theanine** from tea leaves, its physiol. functions, and prospects of its therapeutic use.

L5 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1995:313802 CAPLUS

DOCUMENT NUMBER: 122:131236  
TITLE: Production of **theanine** by cell suspension culture of tea  
AUTHOR(S): Takihara, Takanobu; Kakuda, Takami; Kitada, Takuya; Takeuchi, Naokazu; Sato, Hironobu  
CORPORATE SOURCE: Itoen K. K., Japan  
SOURCE: Shokuhin Kogyo (1994), 37(24), 18-24  
CODEN: SKGYAW; ISSN: 0559-8990  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A **review** with 14 refs. on the prodn. of **theanine** from Camellia sinensis.

=> d ibib abs 11-17

L5 ANSWER 11 OF 17 CAPLUS COPYRIGHT 2000 ACS  
ACCESSION NUMBER: 1987:493436 CAPLUS  
DOCUMENT NUMBER: 107:93436  
TITLE: Useful components of tea in leaves of the genus Camellia  
AUTHOR(S): Nagata, Tadahiro  
CORPORATE SOURCE: Natl. Res. Inst. Teach<sup>2</sup>, Shizuoka, 428, Japan  
SOURCE: Chagyo Shikenjo Kenkyu Hokoku (1986), (21), 59-120  
CODEN: CSKHBI; ISSN: 0528-7820  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A **review** with 103 refs. discussing the xanthines (e.g., caffeine, theobromine), galloyl catechins, and amino acids (e.g., **theanine**) contents of leaves of Camellia species. The isolation and structure elucidation of antifungal saponins are also described.

L5 ANSWER 12 OF 17 CAPLUS COPYRIGHT 2000 ACS  
ACCESSION NUMBER: 1987:116461 CAPLUS  
DOCUMENT NUMBER: 106:116461  
TITLE: Explanation of history of experimentation on the tea root  
AUTHOR(S): Aono, Hideya; Sakai, Shinsuke; Yamashita, Masataka; Ishigaki, Kozo  
CORPORATE SOURCE: Natl. Res. Inst. Tea, Shizuoka, 428, Japan  
SOURCE: Chagyo Gijutsu Kenkyu (1986), (69), 1-16  
CODEN: CHGKAV; ISSN: 0366-6123  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: Japanese  
AB A **review** with 143 refs. discussing the growth process and physiol. of the tea plant root. Biogenesis of amino acids (e.g. **theanine**) is also discussed.

L5 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2000 ACS  
ACCESSION NUMBER: 1983:451887 CAPLUS  
DOCUMENT NUMBER: 99:51887  
TITLE: Study of some nitrogenous substances in tea (Camellia sinensis)  
AUTHOR(S): Neumann, Klaus; Montag, Alfred  
CORPORATE SOURCE: Univ. Hamburg, Hamburg, 2000/13, Fed. Rep. Ger.  
SOURCE: Dtsch. Lebensm.-Rundsch. (1983), 79(5), 160-4  
CODEN: DLUAJ; ISSN: 0012-0413  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: German  
AB A **review** with 9 refs. on the contents of **theanine**

[3081-61-6], free and total amino acids, N, and amines in various tea products and their role in tea ext. quality.

L5 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1982:17219 CAPLUS

DOCUMENT NUMBER: 96:17219

TITLE: Nitrogen metabolism pertaining to biosynthesis of **theanine** in tea plants

AUTHOR(S): Takeo, Tadakazu

CORPORATE SOURCE: Tea Technol. Div., Natl. Res. Inst. Tea, Kanaya, 428, Japan

SOURCE: JARQ (1981), 15(2), 110-16

CODEN: JARJA9; ISSN: 0368-1297

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A **review** and discussion with 10 refs. of **theanine** formation in relation to the biosynthetic pathway of ethylamine, utilization of ammonia-N in tea roots, and the amino acid content of shoots.

L5 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1974:402435 CAPLUS

DOCUMENT NUMBER: 81:2435

TITLE: Biochemical aspects of tea production and processing

AUTHOR(S): Takeo, Tadakazu

CORPORATE SOURCE: Tea Exp. Stn., Kanaya, Japan

SOURCE: Kagaku To Seibutsu (1973), 11(9), 579-84

CODEN: KASEAA

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB The biosynthesis of catechins, caffeine, and **theanine** in Assamese and Chinese tea leaves and the oxidn. of ascorbic acid and catechins in the leaves are reviewed, with 20 refs., in relation to their cultivation and subsequent processing.

L5 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1970:484585 CAPLUS

DOCUMENT NUMBER: 73:84585

TITLE: Physiological chemistry on two amides contained in tea

tree

AUTHOR(S): Konishi, Shigeki

CORPORATE SOURCE: Univ. Kyoto, Kyoto, Japan

SOURCE: Chagyo Kenkyu Hokoku, Shiryo (1970), (2), 22-32

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A **review** with 43 refs. Included are biosynthesis of **theanine** in the root, metabolism of **theanine** into phloroglucinol at the leaves and the buds under illumination, presence of L-glutamic acid .gamma.-methylamine (GMA) in tea leaves, and breakdown of GMA and incorporation of the N-methyl group into Me groups of caffeine under illumination.

L5 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1970:452983 CAPLUS

DOCUMENT NUMBER: 73:52983

TITLE: Biochemistry of **theanine**

AUTHOR(S): Sasaoka, Kei; Kito, Makoto

CORPORATE SOURCE: Univ. Kyoto, Kyoto, Japan

SOURCE: Chagyo Kenkyu Hokoku, Shiryo (1970), (2), 12-21

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Japanese

AB A **review**. Biosynthesis of **theanine** from EtNH<sub>2</sub> and glutamic acid by tea seedling homogenate in the presence of ATP and Mg<sup>++</sup>, isolation from tea seedlings, and the properties of the crude enzyme synthesizing **theanine**, which may be called L-glutamate-ethylamine lyase, properties of the enzyme from peas and pigeon liver, and the breakdown of **theanine** and incorporation of the N-ethyl moiety into the phloroglucinol fraction of catechins after exposure to light are discussed. 13 refs.

=> d hist

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FILE 'MEDLINE, CAPLUS' ENTERED AT 14:49:14 ON 30 NOV 2000

L1 7 S 17010-37-6 OR 34271-54-0 OR 5822-62-8 OR 175696-81-8  
L2 291 S THEANINE  
L3 292 S L2 OR L1  
L4 17 S L3 AND REVIEW  
L5 17 DUPLICATE REMOVE L4 (0 DUPLICATES REMOVED)

=> s l3 and imbalance

L6 1 L3 AND IMBALANCE

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L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1999:549146 CAPLUS

DOCUMENT NUMBER: 131:149342

TITLE: Composition comprising **theanine**

INVENTOR(S): Ueda, Tomoko; Nagato, Yukiko; Tanaka, Yukiko; Okubo, Tsutomu; Kobayashi, Kanari; Aoi, Nobuyuki; Shu,

Seiji;

Juneja, Lekh Raj

PATENT ASSIGNEE(S): Taiyo Kagaku Co., Ltd., Japan

SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9942096	A1	19990826	WO 1999-JP784	19990223
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
JP 2000053568	A2	20000222	JP 1998-234968	19980806
JP 2000143508	A2	20000523	JP 1998-330207	19981105
AU 9925488	A1	19990906	AU 1999-25488	19990223

JP 2000247878      A2      20000912      JP 1999-235538      19990823  
 PRIORITY APPLN. INFO.:      JP 1998-57470      19980223  
    JP 1998-142119      19980508  
    JP 1998-234968      19980806  
    JP 1998-330207      19981105  
    WO 1999-JP784      19990223

AB    The invention relates to a compn. comprising **theanine** which is used for depression and amelioration of the symptom caused by degrdn. of homeostatic function, and a mineral compn. comprising **theanine** and a mineral. A compn. which can be used for depressing and ameliorating the above-mentioned symptom and a mineral compn. which is reduced in a taste peculiar to a metal and can be administrated with ease.

REFERENCE COUNT:      2  
 REFERENCE(S):      (1) Suntory Ltd; JP 06100442 A 1994  
                          (2) Suntory Ltd; JP 640901 A 1994

=> s l3 and nutrition

L7                    11 L3 AND NUTRITION

=> d hist

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FILE 'MEDLINE, CAPLUS' ENTERED AT 14:49:14 ON 30 NOV 2000

L1                    7 S 17010-37-6 OR 34271-54-0 OR 5822-62-8 OR 175696-81-8  
 L2                    291 S THEANINE  
 L3                    292 S L2 OR L1  
 L4                    17 S L3 AND REVIEW  
 L5                    17 DUPLICATE REMOVE L4 (0 DUPLICATES REMOVED)  
 L6                    1 S L3 AND IMBALANCE  
 L7                    11 S L3 AND NUTRITION

=> s 17 not 15 not 16

L8                    10 L7 NOT L5 NOT L6

=> d ibib abs 1-10

L8    ANSWER 1 OF 10    CAPLUS    COPYRIGHT 2000 ACS

ACCESSION NUMBER:      1997:413402    CAPLUS

DOCUMENT NUMBER:      127:94782

TITLE:                    Suitable level of nitrogen fertilizer for tea (Camellia sinensis L.) plants in relation to growth, photosynthesis, nitrogen uptake, and accumulation of free amino acids

AUTHOR(S):                Okano, Kunio; Chutani, Koji; Matsuo, Kiyoshi

CORPORATE SOURCE:        Natl. Res. Inst. Veg. Ornamental Plants Tea, Shizuoka,

428, Japan

SOURCE:                    Nippon Sakumotsu Gakkai Kiji (1997), 66(2), 279-287

CODEN: NISAAJ; ISSN: 0011-1848

PUBLISHER:                Nippon Sakumotsu Gakkai

DOCUMENT TYPE:            Journal

LANGUAGE:                 English

AB    The physiol. responses of pot-grown tea plants to various levels of nitrogen fertilizer were investigated to det. the suitable level of

nitrogen for tea plants. Defining an arbitrary unit of nitrogen application as 1 N plot (200 mgN pot<sup>-1</sup> yr<sup>-1</sup>, corresponding to 10 kgN 10 are<sup>-1</sup> yr<sup>-1</sup>), exptl. plots from 0 to 27 N were prepd. using ammonium sulfate. The plants exhibited symptoms of nitrogen deficiency below 3 N plots. High photosynthetic activity and favorable growth were obsd. from 6 to 12 N plots. Tip-burn of mature leaves and inhibition of photosynthesis were first detected at the level of 15 N plot. At the level of more than 18 N plots, the falling of mature leaves, depression of root respiration and death of some plants occurred. Based on these results, the crit. level for growth and yield was detd. to be 6 N plot. Nitrogen uptake increased with the increase in the amt. of nitrogen applied, while the capacity of uptake gradually satd. The recovery rate of applied nitrogen declined linearly with the increase in nitrogen dressing. The concn. of free amino acids in the first flush shoots increased in an unlimited manner with the increase in nitrogen dressing. However, the abs. amts. in the new shoots were greatest in 9 to 15 N plots due to the inhibition of new shoot growth in heavily manured plots. Thus, with respect to the accumulation of free amino acids, the crit. level for leaf quality is estd. to be around 12 N plot. The **theanine** content in the first flush shoots increased up to 9 N plot. Thereafter, a high content of arginine was detected, implying disorder in the nitrogen metab. These results demonstrate that the crit. level of nitrogen for leaf quality is very close to the toxic level and is twofold greater than that for growth and yield.

L8 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1996:129915 CAPLUS  
 DOCUMENT NUMBER: 124:174695  
 TITLE: Sulfur **nutrition** for tea plant and its effect on tea quality.  
 AUTHOR(S): Ye, Yong; Wu, Xun; Yao, Guokun  
 CORPORATE SOURCE: Tea. Res. Inst., Chinese Acad. Agric. Sci., Hangzhou, 310008, Peop. Rep. China  
 SOURCE: Chaye Kexue (1994), 14(2), 123-8  
 CODEN: CHKEF4; ISSN: 1000-369X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese

AB The S content in the organs of tea tissues is: absorbing roots > conducting roots > leaves > semixyloid stems > xyloid stems; and seeds > flowers. The effect of S **nutrition** on the quality components and the related enzyme activities in fresh leaves was analyzed, in pot and field expts. The basic metab. of tea plants was improved, and the photosynthetic rate, chlorophyll content, total N content and total P content were increased, and the uptake of K from the soil was inhibited by supplying S to tea. At certain levels of S, the nitrate reductase activity, the free amino acid content, esp. the **theanine** and aspartic acid content in fresh leaves increased, but the polyphenol oxidase activity and the polyphenol metab. decreased, resulting in the dropping of the polyphenol/amine value, which was good for the quality of green tea.

L8 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1995:267260 CAPLUS  
 DOCUMENT NUMBER: 122:25877  
 TITLE: Manufacture of nutrients containing L-**theanine**

for tea leaves and plants  
 INVENTOR(S): Handa, Kayoko; Yokoyama, Tsunetaka  
 PATENT ASSIGNEE(S): Yokoyama Tsunetaka, Japan; Handa Kayoko  
 SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 06256110	A2	19940913	JP 1992-304328	19921003
AB	A mixt. contg. amino acid (e.g., <b>theanine</b> ) and cytokinin (e.g., kinetin), auxin (e.g. indole acetic acid) and vitamins is sprayed on leaves to improve the taste of tea and nutrient efficacy.				

L8 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2000 ACS  
 ACCESSION NUMBER: 1994:556550 CAPLUS  
 DOCUMENT NUMBER: 121:156550  
 TITLE: Effect of zinc on carbon and nitrogen metabolism in tea plant (Camellia sinensis L.)  
 AUTHOR(S): Wu, Cai; Fang, Xinghan  
 CORPORATE SOURCE: Tea Res. Inst., Chin. Acad. Agric. Sci., Hangzhou, 310008, Peop. Rep. China  
 SOURCE: Zhongguo Nongye Kexue (Beijing) (1994), 27(2), 72-7  
 CODEN: CKNYAR; ISSN: 0578-1752  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese  
 AB The levels of nucleic acids, sol. proteins, free amino acids, catechins, chlorophyll, zinc, phosphorus, and photosynthetic efficiency and nitrate reductase activity in tea (Camellia sinensis L.) seedlings, which had been cultured with different concns. of Zn, were detd. Results showed that Zn enhanced photosynthesis, nitrate reductase activity and synthesis of protein and RNA, and increased content of non-ester catechin. Zn concns. from 1.00 to 2.00 ppm were in favor of the synthesis of **theanine**. However, Zn decreased the content of DNA and ester catechin, and P absorption of the seedlings.

L8 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2000 ACS  
 ACCESSION NUMBER: 1993:538364 CAPLUS  
 DOCUMENT NUMBER: 119:138364  
 TITLE: Influence of different measures on carbon and nitrogen distribution and quality of tea leaves in tea plant  
 AUTHOR(S): Xie, Xuemin; Yang, Xiangqiang; Shen, Yuwei; Wang, Dongfeng; Li, Longming  
 CORPORATE SOURCE: Inst. Nucl. Agric. Sci., Zhejiang Agric. Univ., Hangzhou, 310029, Peop. Rep. China  
 SOURCE: Henong Xuebao (1993), 7(1), 29-36  
 CODEN: HEXUEE; ISSN: 1000-8551  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese  
 AB By using an isotopic tracer technique, the effects of different management on carbon and nitrogen distributions in tea plant and tea quality were studied. Late-autumn fertilizing stimulated photosynthate accumulation in the whole bush, esp. in overwintering leaves and roots. The large amt. of

photosynthates in overwintering leaves provided nutrients required for early spring budding. Late-autumn fertilizing also accelerated transport of photosynthates from leaves to roots in winter. More amino acids, esp. **theanine** and phenylalanine, were synthesized from photosynthates and absorbed nitrogen. Potassium stimulated the transport speed and utilization ratio of photosynthates in tea plants. After the first picking of tea, proper pruning of shoots improved the quality of summer tea leaves. Heavy pruning of shoots, if necessary, could be carried out at the period of abundant nutritional matter in tea plant. GA sprayed on tea plants affected growth pos. only at the period when nutritional matter was abundant in the plants; otherwise it inhibited the growth of tea plants.

L8 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1992:588299 CAPLUS  
DOCUMENT NUMBER: 117:188299  
TITLE: **Theanine** formation by tea suspension cells  
AUTHOR(S): Matsuura, Takanobu; Kakuda, Takami; Kinoshita, Tatsuyuki; Takeuchi, Naokazu; Sasaki, Kyosuke  
CORPORATE SOURCE: Cent. Res. Inst., Ito-En, Ltd., Shizuoka, 421-05, Japan  
SOURCE: Biosci., Biotechnol., Biochem. (1992), 56(8), 1179-81  
CODEN: BBBIEJ  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The theanine (THE,  $\gamma$ -glutamylethylamide) content and the growth rate of cultured cells of tea (*Camellia sinensis*) were increased greatly to 22.3% (dry wt.) with a medium contg. 60 mM nitrate and 25 mM

ethylamine as nitrogen source. The optimum concns. of nitrate,  $Mg^{2+}$ , and  $K^+$  for the growth and formation of THE in suspension cells were 40, 3, and 104 mM, resp. The yield of THE accumulated in the cultured cells with the medium modified for THE formation was increased greatly due to a large increase of the growth rate.

L8 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1991:100390 CAPLUS  
DOCUMENT NUMBER: 114:100390  
TITLE: Effects of late-autumn fertilizer dressing on accumulation of photosynthates in tea (*Camellia sinensis*) and its contribution to spring tea quality  
AUTHOR(S): Shen, Y.; Yang, X.; Xie, X.  
CORPORATE SOURCE: Inst. Nucl. Agric. Sci., Zhejiang Agric. Univ., Hangzhou, 310029, Peop. Rep. China  
SOURCE: J. Agric. Sci. (1990), 115(2), 233-8  
CODEN: JASIAB; ISSN: 0021-8596  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Two-year-old tea bushes were given N-P-K fertilizer on 12 Nov. 1986 and  $14CO_2$  on 22-23 Dec. 1986 and 9-10 Jan. 1987. Late-autumn fertilizer dressing stimulated photosynthate accumulation in the whole bush, esp. in overwintering leaves and roots. Large amts. of photosynthates in overwintering leaves provide the **nutrition** required for early spring budding. Late-autumn dressing also accelerated the transport of photosynthates from leaves to roots in winter, where photosynthates, with absorbed nitrogen, synthesized more amino acids, esp. **theanine** and phenylalanine. The reuse of photosynthates stored in the roots of

the dressed bushes during shoot growth the following spring was also facilitated by late-autumn dressing. The contents of amino acids and



caffeine in the shoots of dressed bushes were much higher than those in the control, whereas the content of polyphenol was lower than in the control. Thus, late-autumn dressing improves the quality of spring green tea.

L8 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1990:157200 CAPLUS

DOCUMENT NUMBER: 112:157200

TITLE: Soil nutrient condition in tea plantation in relation to tea quality and its adjustment and control

AUTHOR(S): He, Dianyuan; Xu, Guohuan; Fan, Lamei; Liao, Xianling

CORPORATE SOURCE: Changsha Inst. Agric. Modernization, Acad. Sin., Changsha, Peop. Rep. China

SOURCE: Turang Tongbao (1989), 20(6), 245-8

CODEN: TUTOEG; ISSN: 0564-3945

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB Tea plants were cultivated on red soil of medium or low fertility. The amino acid content of tea leaves correlated with total N and available Zn in the soil. Mo fertilizer or Mn fertilizer increased the content of **theanine** in tea leaves. The Al-P fraction in soil was an available source of P for tea plants. B fertilizer increased the wt. of leaf buds. Prodn. of 100 kg tea leaves (dry wt.) required N 96.2, P

28.5,

K 41.8, Ca 18.0, Mg 27.8 and Mn 5.80 kg.

L8 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1986:552124 CAPLUS

DOCUMENT NUMBER: 105:152124

TITLE: Assimilation and translocation of nitrogen by tea plant

AUTHOR(S): Hoshina, Tsuguo; Kosuge, Nobuo

CORPORATE SOURCE: Natl. Res. Inst. Tea, Minist. Agric., For., Fish., Makurazaki, 898, Japan

SOURCE: Chagyo Kenkyu Hokoku (1985), (62), 14-17

CODEN: CHKHB9; ISSN: 0366-6190

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB When one-year-old seedlings of tea cultivar Yabukita were water-cultured without nutrient for 3 wk, fine roots contained glutamic acid (I) 401, aspartic acid (II) 255, glutamine (III) 54, asparagine (IV) 49, **theanine** (V) 46, and 4 others 112 nmol/g fresh wt. After addn. of 30 ppm NH<sub>3</sub> as (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, III increased to 22,185 after 48 h, V increased to 395.apprx.511 after 2.apprx.48 h, I and II decreased to 163 and 65 after 2 h and increased to 877 and 356 nmol after 48 h, resp., and IV increased to 109.apprx.119 after 8.apprx.24 h and to 236 nmol/g after 48 h. Arginine [74-79-3] was very low in fine roots. When 2-wk-old seedlings were soaked in 200 ppm 15N at 30.degree. in the dark, III in fine roots increased to 0.83 and 3.86 and V to 0 and 0.04 atom% excess after 0.5 and 2 h resp., and amido-N of III was 25.apprx.32 times as much as amino-N, but amido and amino-N in V were 0.03 and 0.05 atom% excess, resp. When a 4-yr-old tea plant was grown on soil for about 7 mo without fertilizer, xylem sap contained III 258, V 138, I 97, II 46, and 5 other amino acids 81 nmol/mL. When 2 g N as (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> in 200 mL was applied to the plant, III and V increased to 13,529.apprx.19,509 and to 1244.apprx.4652, but I and II decreased to 13.apprx.27 and 1.apprx.13 nmol/mL after 2.apprx.14 days, resp. Thus, NH<sub>3</sub> was primarily assimilated into III by tea root, and then N compds. were translocated into aerial parts in xylem sap.

L8 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1985:220077 CAPLUS  
 DOCUMENT NUMBER: 102:220077  
 TITLE: Nitrogen-15 study on the fate of foliarly applied urea  
 AUTHOR(S): nitrogen in tea plant (Camellia sinensis L.) Karasuyama, Mitsuki; Yoneyama, Tadakatsu; Kobayashi, Hironobu  
 CORPORATE SOURCE: Kagoshima Tea Exp. Stn., Kawanabe, 897-03, Japan  
 SOURCE: Soil Sci. Plant Nutr. (Tokyo) (1985), 31(1), 123-31  
 CODEN: SSPNAW; ISSN: 0038-0768  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The fate of foliarly applied N from urea [57-13-6] in 1-yr-old tea plants

was investigated by applying 15N-labeled urea to the shoots 3 times during

5 days. On the day following the final urea application (Day 1), a large part of applied-N was retained in the form of N compds. sol. in 80% EtOH soln. in the leaves, and after 7 days (Day 7) the percentage of applied-N in the insol. fraction increased, suggesting that the applied-N was utilized for protein synthesis. The percentage of applied-N translocated to the roots was very small, only a few percent, of which >70% was found in the insol. fraction. The percentages of N derived from applied urea

in N contained in glutamine [56-85-9] and arginine [74-79-3] were high on Day 1 in the leaves, but on Day 7 amts. in glutamine became lower, while those in arginine still remained at high levels. The percentages of applied-N in **theanine** [3081-61-6] were low in all of the tissues (Day 1 and Day 7). The percentages of applied-N in caffeine [58-08-2] in the leaves were much higher than those in **theanine**, and increased from Day 1 to Day 7. Evidently, N derived from foliar application of urea is assimilated into glutamine first, and then transferred to other amino acids, as well as to caffeine and protein. Arginine is synthesized with N derived from urea application only to a small extent, probably due to the fact that **theanine** is synthesized in the roots and little of foliarly applied-N is transported to the roots in summer.

=> log y

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